

CLAIMS

1. A web smoothing roller comprising a rotary roller main body, a fiber structure with stretchability, covering the outer peripheral surface of the rotary roller main body, and an expansion/contraction means for expanding/contracting the fiber structure in the direction of the rotation center axis of the rotary roller main body.
2. A web smoothing roller according to claim 1, wherein the fiber structure is a cylindrical fabric.
3. A web smoothing roller according to claim 2, wherein the cylindrical fabric is seamless.
4. A web smoothing roller according to claim 2, wherein the cylindrical fabric is composed of elastic yarns or yarns containing them.
5. A web smoothing roller according to claim 2, wherein the cylindrical fabric is a knitted fabric.
6. A web smoothing roller according to claim 5, wherein the knitted fabric is composed of elastic yarns or yarns containing them.
7. A web smoothing roller according to claim 5, wherein the knitted fabric is seamless.
8. A web smoothing roller according to claim 1, wherein the expansion/contraction means are provided outside on both sides 25 in the direction of the rotation center axis of the rotary roller main body and each of which comprises an inclined collar being

rotatable around a rotating central axis which is inclined against the rotation center axis of the rotary roller main body, and wherein the fiber structure and the inclined collars form an enclosure surrounding the rotary roller main body.

5 9. A web smoothing roller according to claim 8, wherein the coefficient of static friction between the fiber structure and a web is from 0.3 to 0.7, and the coefficient of static friction between the fiber structure and the rotary roller main body is 0.4 or less.

10 10. An apparatus for producing a web roll, which comprises a web feeding apparatus for continuously feeding a web, a web carrying apparatus for carrying the web continuously fed from the feeding apparatus, and a web winding apparatus for continuously winding as a roll, the web continuously carried by the carrying apparatus, wherein a web smoothing roller as set forth in claim 1 is provided at least at one place in the carrying apparatus.

15 11. An apparatus for producing a web roll according to claim 10, wherein the web smoothing roller is disposed in such a manner that it can be kept in pressure contact with a surface of the web 20 roll formed in the web winding apparatus.

25 12. A method for producing a web roll, which comprises a web feeding step for continuously feeding a web, a web carrying step for continuously carrying the web continuously fed from the feeding step, and a web winding step for continuously winding as a roll, the web continuously carried by the carrying step, wherein a web smoothing roller as set forth in claim 1 is provided at least

at one place in the web carrying step.

13. A method for producing a web roll according to claim 12,
wherein the web is a polyester film.